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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,735	05/25/2004	Chih-Chiang Wen	MTKP0165USA	3734
27765	7590	10/11/2007		
NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION P.O. BOX 506 MERRIFIELD, VA 22116			EXAMINER PORTKA, GARY J	
			ART UNIT	PAPER NUMBER
			2188	
			NOTIFICATION DATE	DELIVERY MODE
			10/11/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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**Office Action Summary**

Application No.

10/709,735

Applicant(s)

WEN ET AL.

Examiner

Gary J. Portka

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4, 7-12, 14-16, 18-23, 25-28 and 30-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-12, 14-16, 18-23, 25-28 and 30-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. Claims 1-4, 7-12, 14-16, 19, 21-22, 25-28, and 30-35 have been amended, claims 5-6, 13, 17, 24, and 29 have been canceled, and claims 36-37 have been added by Applicant. Claims 1-4, 7-12, 14-16, 18-23, 25-28, and 30-37 are pending.

### ***Response to Arguments***

2. Applicant's arguments have been considered but are largely moot in view of the new ground(s) of rejection. It is acknowledged that a terminal disclaimer was filed in the copending application 10/710,097, and thus the double patenting rejection is withdrawn. Examiner acknowledges the explanation that firmware is met by command codes. Applicants argue that Hall downloads firmware commands as needed then removes them, but clearly Hall includes initialization data that is not removed and could benefit from updateability as described below (otherwise the initialization must be downloaded). Applicants also argue that applying the command code download scheme of Hall to Hu renders Hu unable to function properly, but Examiner disagrees and maintains that an artisan would have been easily able to distinguish the advantages of each system and to use them as desired, as described below.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 1-2 and 7-12, 14-16, 18-23, 25-28, and 30-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hall et al., US 2004/0122989 A1 (hereinafter "Hall"), and Hu, US 6,170,043 B1 (hereinafter "Hu")

5. The applied reference (Hu) has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(I)(1) and § 706.02(I)(2).

6. As per Claims 1, 11, 16, 21, 25, and 27, Hall discloses a circuit (Fig. 2), download mode, computer system, and controller comprising bus interface (between 16 and 12) for communications with a host (12), an interface unit electrically coupled to the bus interface for downloading operational firmware from the host (within I/O system 16), a control circuit (within I/O system 16) electrically coupled to the interface unit for

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transferring the downloaded operation firmware to a volatile memory (at 20), microprocessor electrically coupled to the control circuit for executing the downloaded operational firmware while stored in the volatile memory, wherein the microprocessor controls the normal operations of the disc drive circuit according to the downloaded firmware (see Abstract and para. 0007). Hall does not disclose downloading initialization data as part of the firmware download; the initialization has already taken place and apparently only ongoing firmware operational functions are downloaded. However, it was known that firmware periodically requires updating, and an artisan could reasonable assume that such updates might easily be downloaded via the same circuit. Hu describes a firmware update system where both operational firmware and initialization data are downloaded (see col. 2 lines 17-29, "firmware information"). That is, the updated firmware in Hu contains initialization data. Clearly as recognized in Hu the operational commands and initialization data are both advantageously updated by downloading, and an artisan would have recognized that this updating could be easily implemented in the system of Hall. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to download initialization data, because such data is part of an update of firmware which was known to be beneficial for updating systems.

7. Alternatively, Hu discloses an optical disc drive circuit, download mode, computer system, and controller comprising: a bus interface for communications with a host [Figure 2, #214 & Column 1, Lines 63-67]; an interface unit electrically coupled to the bus interface for downloading operational firmware and initialization data from the host

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[Figure 2, #206, Column 1, Line 63 – Column 2, Line 6 & Column 5, Lines 38-43]; a control circuit electrically coupled to the interface unit [Figure 2, #208] for transferring the downloaded operational firmware to a volatile memory [Figure 2, #210, #202 & Column 1, Line 63 – Column 2, Line 6]; wherein the microprocessor controls the normal operations of the optical disc drive according to the downloaded operational firmware [Column 2, Lines 6-17 & Lines 20-29, col. 4 lines 8-19]. Hu does not disclose that the firmware is executed while stored in the volatile memory. However, Hall discloses a firmware update method (para. 0007) that stores firmware updates in and executes them from a volatile memory. This reduces cost because of reduction in required RAM and ROM (see para. 0008). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the firmware updating method of Hall for the optical optical disk drive circuit of Hu, because it would reduce RAM and ROM requirements.

8. As per Claims 2, 14, 18, 23, and 28, Hu further discloses the optical disc drive circuit of claim 1 wherein the bus interface conforms to USB, IDE, SATA, SAS, or SCSI interface standards [Column 3, Lines 45-46].

9. As per Claims 7, 15, 20, 30, and 31, Hu further discloses the optical disc drive circuit of claim 1 wherein the host is a computer system [Figure 2, #212].

10. As per Claim 8, Hu further discloses the optical disc drive circuit of claim 1 wherein the microprocessor executes the downloaded operational firmware without accessing a non-volatile memory [Column 6, Lines 17-28].

11. As per Claim 9, Hu further discloses the optical disc drive circuit of claim 1 wherein the normal operations of the optical disc drive at least include reading data from an optical disc [Column 3, Lines 62-66].

12. As per Claims 10 and 26, Hu further discloses the optical disc drive circuit of claim 1 wherein the volatile memory comprises the downloaded operational firmware being executed by the microprocessor to control normal operations of the optical disc drive [Column 4, Lines 8-19].

13. As per Claim 12, Hu further discloses the optical disc drive of claim 11 wherein the normal operations of the optical disc drive at least include reading data from an optical disc, processing the data, and transferring the processed data to the host [Column 3, Line 62 – Column 4, Line 7].

14. As per Claim 19, Hu further discloses the method of claim 16 further comprising the optical disc drive transmitting an electrical signal to an application program in the host to begin downloading the operational firmware [Column 5, Lines 25-27].

15. As per Claim 22, Hu further discloses the computer system of claim 21 wherein the normal operations of the optical disc drive at least include controlling the rotational speed of an optical disc in the optical disc drive and reading data from the optical disc [Column 3, Lines 63-66].

16. As per Claim 32, Hu further discloses the optical disc drive circuit of claim 27 wherein the host system comprises the volatile memory [Figure 2, #212 & Column 4, Lines 8-19].

17. As per Claim 33, Hu further discloses the optical disc drive circuit of claim 27 wherein the host system comprises a host controller accessing the volatile memory that is shared by the host system and the microprocessor during the normal operation [Column 4, Lines 8-19].

18. As per Claim 34, Hu further discloses the optical disc drive circuit of claim 27 wherein the volatile memory is accessed only by the optical disc drive circuit on the normal operation [Column 3, Lines 48-57].

19. As per Claim 35, Hu further discloses the optical disc drive circuit of claim 27 wherein the optical disc drive circuit comprises the volatile memory [Figure 2, #212, #202 & Column 4, Lines 8-19].

20. Claims 3 & 4 are rejected under 35 U.S.C. 103(a) as being obvious over Hall, in view of Hu, as applied to Claim 1 above, and further in view of Kamihara et al (US PGPub # 2002/0169904), herein Kamihara.

21. The Hall and Hu combination described above with regard to claim 1 does not expressly disclose using macros. However, as per Claim 3, Kamihara teaches the use of the optical disc drive circuit of claim 1 wherein the interface unit is a macro [Figure 6, #20 & ¶0095].

22. As per Claim 4, Kamihara further discloses the optical disc drive circuit of claim 3 wherein the macro comprises handshaking, data reception, and writing received data into the memory functions [¶0095-0097 & ¶0102].

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23. Hall, Hu and Kamihara are analogous art because they are from the same field of endeavor: computer system memory management. At the time of invention, it would have been obvious to a person of ordinary skill in the art to combine a macro interface unit, as disclosed by Kamihara, within the optic disk controller, as disclosed by Hall and Hu. The suggestion/motivation for doing so would have been for the benefit of aiding the implementation of data transfers, as taught by Kamihara in ¶0096.

***Claim Rejections - 35 USC § 102***

24. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

25. Claims 36 and 37 are rejected under 35 U.S.C. 102(e) as being anticipated by Hall.

26. As to claims 36 and 37, Hall discloses bus interface and interface unit and control for downloading operational firmware to a volatile memory (as cited with regard to claim 1) non-volatile memory storing initialization data (18, see 0006) without storing operational firmware, and microprocessor that executes the operational firmware to operate the device.

***Conclusion***

27. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

28. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary J. Portka whose telephone number is (571) 272-4211. The examiner can normally be reached on M-F 9:30 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hyung Sough can be reached on (571) 272-6799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gary J Portka  
Primary Examiner  
Art Unit 2188

October 1, 2007

**GARY PORTKA**  
**PRIMARY EXAMINER**

A handwritten signature in cursive script, appearing to read "Gary J Portka", written in black ink.